



Installation Guide

Sapphire

High-Performance Air & Moisture Control Barrier

For Walls • Roofs • Attics • Basements

Product Overview

Sapphire is a premium air and moisture control barrier designed to optimize building envelope performance. It provides superior airtightness, vapor management, and moisture protection, helping maintain energy efficiency, prevent mold, and extend building life. The membrane is lightweight, flexible, and easy to install, making it ideal for residential, commercial, and light-industrial applications.

Storage

Rolls of Sapphire should be stored flat or on their sides on a clean, level surface, ideally on pallets, and kept covered to protect them from direct sunlight.

Damage Prevention

Handle the membrane carefully to minimise the risk of tears or punctures. Minor punctures may be repaired using ARK Acrylic Tape, while larger damaged areas should be replaced with new material.

Installation Orientation

Sapphire is installed on the internal side of the building envelope, with the smooth blue side and logo facing the interior. The membrane may be laid horizontally or vertically depending on the substrate.

Fixing – Timber

Initial fixing can be achieved using ARK Double Sided (acrylic) Tape together with stainless steel staples. For long-term security, timber battens should be installed over the membrane, also sealing staple penetrations.

If battens are not used, apply ARK Butyl Tape (double sided) to studs or noggins before stapling. Subsequent internal lining fixings should also penetrate through the ARK Butyl Tape.

Fixing – Masonry

Sapphire may be attached to masonry using suitable anchor fasteners, masonry nails, or screws with EPDM washers. Fixings should not exceed 500mm spacing. ARK Double

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Sided (acrylic) Tape may be used alongside mechanical fixings.

If compressible washers are not used, apply ARK Butyl Tape (double sided) at fixing points to maintain airtightness. For chalky or porous masonry, a primer may be applied to enhance adhesion before taping.

Fixing – Steelwork (SFS)

Temporary fixing may be carried out using continuous strips of ARK Double Sided (acrylic) Tape, supplemented by mechanical fixings into the steel structure using drill-tip or self-tapping screws. A rubber or EPDM washer should be positioned between the screw head and membrane.

Screws are typically spaced vertically at 500mm per stud (common 600mm stud centres). Membrane security may be further enhanced by installing battens or lining brackets after fixing.

Rainscreen Cladding Applications

Sapphire may be fixed to cement-bonded particle board, OSB, or plywood sheathing using ARK Double Sided (acrylic) Tape and stainless-steel staples. It may also be secured by fixing through the sheathing into the supporting structure (see steelwork fixing).

In many rainscreen assemblies, battens or metal brackets (with insulation) provide the main restraint for the membrane. Ensure components are tightened to prevent water ingress; ARK Butyl Tape may be applied where additional sealing is required.

Fixing – Insulation

Attach Sapphire to rigid insulation using proprietary expanding insulation anchors at maximum 500mm spacing. Penetrations caused by wall ties or cladding brackets should be sealed using ARK Acrylic Tape or ARK UltraWrap Flex Tape.

Laps

Maintain minimum 100mm laps between sheets and seal using ARK Acrylic Tape or ARK Double Sided (acrylic) Tape.

Detailing

Ensure continuous coverage across internal wall or roof surfaces. Maintain airtight continuity at wall, floor, and roof junctions, sealing with ARK Acrylic Tape or ARK Double Sided (acrylic) Tape.

Windows, Doors, and Loft Hatches

Sapphire should be sealed tightly to frames using ARK Acrylic Tape or ARK Double Sided



(acrylic) Tape. Internal corners may be reinforced with ARK Sapphire Tape or ARK UltraWrap Flex Tape.

Where plaster or render is to be applied, ARK Plastering Tape should be used for window perimeter sealing.

Penetrations

All penetrations (lighting, pipework, cabling, etc.) must be sealed with ARK UltraWrap Flex Tape. Fixings through timber, masonry, or steel should be sealed using ARK Butyl Tape.

Batten / Service Void

An internal lining such as plasterboard may be spaced off Sapphire to form a service void, helping to avoid membrane perforations from electrical or plumbing installations while maintaining airtightness and reflective performance.

Timber battens should be a minimum of 25mm thick, with ARK Butyl Tape applied behind them for added sealing.

Light Fittings

Where no service void exists, a sealed enclosure should be formed around light fittings and sealed using ARK Butyl Tape or ARK Acrylic Tape. Wiring penetrations should be sealed thoroughly with ARK UltraWrap Flex Tape.

For downlights, sealed low-energy LED units with F-Capped approval are recommended to allow continuous insulation coverage. If halogen lighting is used, an F-Capped approved loft cap must be installed above

Precautions

Personal Protection: Wear appropriate personal protective equipment (PPE), such as gloves and safety glasses, to prevent cuts from sharp membrane edges or installation tools.

Environmental Conditions: Avoid installation in wet, dusty, or extreme temperature conditions (too hot or too cold), as these may affect tape adhesion or membrane performance.

Handling Penetrations: For penetrations such as electrical conduits or lighting fixtures, properly prepare and seal the openings (e.g., with dedicated sealing tape or sealant) to maintain airtightness.

Fastening Methods: Avoid using nails or sharp fasteners that could damage the membrane. If screws or nails are used, consider using washers or pre-drilling, and



seal all penetration points.

Maintenance & Warranty

Sapphire do not need special maintenance after installed; Lifetime warranty from the day of installation if it is quality defects.

Remark:

Recommendations on methods, materials, and construction details are provided by Ark Synthetics based on current knowledge and experience. They serve as a general guide for designers, contractors, and manufacturers. Installation should also consider local conditions, project-specific requirements, and guidance from designers or other qualified professionals. For project assistance, contact: info@arksynthetics.com

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